

REMARKS

The Office Action dated October 18, 2007 has been reviewed, and the comments of the U.S. Patent Office have been considered. Claims 1-11, 14, 15 and 20-74 are currently pending, claims 1-11, 14, 15, 20-54 and 62-74 stand rejected, and claims 55-61 stand withdrawn. Reconsideration of this application in view of the above claim amendments and the arguments presented below is respectfully requested.

Claims 1-11, 14, 15, 20-41, 46-54, 63-74 stand rejected under 35 USC 112, first paragraph as allegedly failing to comply with the written description requirement. According to the Examiner, the claims purportedly contain subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventors had possession of the invention at the time the application was filed. *See Detailed Action at 2, para. 3.*

With regard to claims 1-11, 14, 15, 20-41, 46-54 and 63, the Examiner asserts that the disclosure, as originally filed, fails to teach the deflector having first and second arms that support a generally planar face. *Id.* Applicants disagree with the rejection in view of the Examiner's acknowledgment that the specification shows and describes a deflector having arms 52, 54. *See id.* at 3. Moreover, the disclosure describes the deflector 40 including a canopy portion 44 and a face portion 42, in which the canopy portion is "located adjoining but spaced radially outward away from and above an upper edge 42a of the face portion 42 and is supported by a pair of symmetric curve arms 52 and 54 of the deflector." *See Application As Originally Filed at 8, lines 18-21, FIGS. 3-5, 10.* Notwithstanding, claims 1, 20, 24, 25, 45-48, 50, and 63 have been amended to recite, an extended coverage sidewall fire sprinkler comprising, among other features, a deflector including a first arm, a second arm, a face portion, and a canopy

portion supported and/or coupled to the face portion by the first and second arms. Again, support for the amendment is provided by the application as originally filed, for example, at page 8, lines 18-21, and FIGS. 3-5, 10.

With regard to claims 67 and 72-73, each of which recite, “ a face portion . . . the face portion consisting of a single flow opening,” the Examiner again contends that the claims do not comply with the written description because the disclosure, as originally filed discloses the face portion having several flow openings. *See* Detailed Action at 3. As was explained in the June 11, 2007 Amendment Response, shown in FIG. 6 is a planar blank 40’, which is bent to form deflector 40 of FIGS. 1 and 3-5. Specifically shown is that the blank 40 has a single opening framed in part by arms 52’ and 54’. Thus, the description provides support for the rejected claims 67 and 72-73. The Examiner did not respond to applicants’ June 11 rebuttal arguments, and therefore it is not clear that they were fully considered. *See* MPEP 2163.04 (“If the record still does not demonstrate that the written description is adequate to support the claim(s), repeat the rejection under 35 U.S.C. 112, para. 1, fully respond to applicant's rebuttal arguments, and properly treat any further showings submitted by applicant in the reply”). The applicants respectfully remind the Examiner, that when considering whether there is 35 U.S.C. 112, first paragraph support for a claim limitation, the Examiner must consider not only the original disclosure contained in the summary and detailed description of the invention portions of the specification, but also the original claims, abstract and drawings. *See* MPEP 2181 pt. IV at 2100-233. Withdrawal of the rejection is respectfully requested.

According to the Examiner, claim 64 remains rejected under 35 U.S.C. 112, first paragraph as failing to comply with the written description requirement, and claims 64-74 remain rejected under 35 USC 112, second paragraph as allegedly being indefinite for failing to

particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claim 64 recites a means for transforming and delivering, a dual function according to the Examiner. *See* Detailed Action at 3, para 4. The Examiner further asserts that the disclosure, as originally filed, purportedly fails to teach a structure which performs the dual function, and thus, claim 64 and the claims depending therefrom allegedly fail to comply with the written description requirement. Moreover, the Examiner states at pages 3-4 of the Detailed Action, the metes and bounds of the claims cannot be determined because the specification purportedly does not disclose a structure which performs the dual function. *See* Detailed Action at 3-4, para. 4. In finding the arguments presented in the June 11, 2007 Amendment Response unpersuasive, the Examiner argued that although the specification describes the overall sprinkler system, the specification purportedly fails to teach what structure of the deflector 40 enables the function of the means claimed in claim 64. *See* Detailed Action at 8, para. 8.

“To satisfy the written description requirement, a patent specification must describe the claimed invention in sufficient detail that one skilled in the art can reasonably conclude that the inventor had possession of the claimed invention.” MPEP 2163 at 2100-165. Possession may be shown with an actual reduction to practice of the claimed invention, and may also be shown by a clear depiction of the invention in detailed drawings. *See id.* at 2100-171. The application as originally filed provides in the Brief Summary of the Invention, a “deflector being shaped and positioned to transform water discharged horizontally from the outlet upon release of the closure by the trigger” *See* Application as Originally Filed at 2, lines 11-12 (emphasis added). At page 9 of the application as originally filed, described is the deflector 40 with frame 11 having “been shown to be capable of controlling ordinary hazard fires over rectangular extended coverage areas of between 16 x 16 feet (256 square feet) and 16 x 20 (320 square feet) by being

able to deliver a sufficiently uniform distribution of water over that area where such water is supplied to the sprinkler 10 at a pressure which causes the sprinkler to discharge the water at a rate of at least 0.15 gallons per minute per square foot (GPM/ft.²) of the coverage area to be protected.” *See id.* at 9, line 18 to 10, line 1 (emphasis added). Thus the specification and its detailed description, as originally filed, provide support for the purported dual function.

Moreover, at page 11, line 5 to page 13, line 4 described with reference to FIGS. 12-14 is described a sidewall sprinkler system in which structure is further shown and described corresponding to the claimed means of claim 64. In view of the detailed description provided by the application as-originally filed, so as to indicate to one of ordinary skill in the art that the inventors had possession of the invention as claimed, applicants respectfully request withdrawal of the rejection. In addition, the cited passages of the specification as originally filed, are sufficient to identify the structure which define the claimed means plus function so that the metes and bounds of the claim can be determined.

Claims 64-74 also stand rejected under 35 U.S.C. 112, second paragraph, as purportedly failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. As discussed above, the application as originally filed describes detailed structure that corresponds to the claimed means for performing the “dual function” as asserted by the Examiner. If the corresponding structure, material or acts are described in the specification in specific terms and one skilled in the art could identify the structure, material or acts from the description, then the requirements of 35 U.S.C. 112, second and sixth paragraphs are satisfied. *See* MPEP 2181 pt. III at 2100-232. The Examiner has not alleged that one of ordinary skill in the art could not identify the corresponding structure. Instead, the Examiner alleges that the specification “fails to teach what structure of the deflector

40 enables the function of the means claimed in claim 64.” See Detailed Action at 8, para. 8.

The Examiner has not explained how the specification, particularly at page 2, lines 11-12 and pages 9, line 18 to page 10, line 1 as discussed above, fails to describe corresponding structure in specific terms so as to be identifiable to one of ordinary skill in the art under the appropriate analysis. Applicants respectfully request withdrawal of the rejections.

Claims 1-11, 14, 15, 20-54, 62 and 64-74 stand rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 4,296,816 to Fischer (“Fischer”) in view of U.S. Patent No. 5,810,263 to Tramm (“Tramm”). Claims 63 stands rejected under 35 U.S.C. 103(a) as being unpatentable over Fischer in view of Tramm, U.S. Patent No. H121 to Pieczykolan (“Pieczykolan”) and U.S. Patent No. 5,727,737 to Bosio et al. (“Bosio”). Applicants again respectfully traverse the rejection of these claims as being obvious because there is no motivation, suggestion or identified reason to modify or combine Fischer with Tramm alone or in view of Pieczykolan and Bosio. In addition, Fischer even in view of Tramm, still fails to teach or suggest specified features of the claimed invention, i.e., the claimed deflector of the sprinkler. Because there is no motivation suggestion or identified reason to combine Fischer and Tramm and because all of the claimed features are not taught by the combination, a *prima facie* case of obviousness cannot stand.

To support the obviousness rejection, the Examiner asserts throughout the Office Action that it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the sprinkler of Fischer with the purported teachings of Tramm. The Examiner’s proposed combination of references was made having apparently considered, yet finding unpersuasive, the Declaration of Michael A. Fischer. Despite the Examiner’s discount of the Declaration, applicants again emphasize that Mr. Fischer states that he (as one of more than

ordinary skill in the art and inventor of the sprinkler of Fischer) would, at the time the invention was made, not have known how to modify the sprinkler shown and described in Fischer with the teachings of Tramm to reach applicants' invention. Consequently, a person of ordinary skill would not have been suggested, motivated or had an identified reason to modify the sprinkler shown and described in Fischer with the teaching of Tramm, as proposed by the Examiner, to reach the claimed invention as a whole so as to support a prima facie case of obviousness.

In addition to discounting the Declaration of Michael A. Fischer, the Examiner proposes to modify the sprinkler of Fischer with the teachings of Tramm to reach applicants invention in the absence of any other motivation, suggestion or identified reason to do so. Applicants again respectfully remind the Examiner, "[t]he mere fact that the references can be combined or modified does not render the resultant combination obvious unless the prior art also suggests the desirability of the combination." MPEP 2143.01 at 2100-128 to 2100-129. As has been previously noted, Tramm seeks to distinguish itself from Fisher. Tramm cites Fischer as an illustrative horizontal-type sprinkler. *See* Tramm, col. 1, lines 35-43. Tramm describes typical horizontal-type sprinklers as having substantially horizontal flow confining elements in which the confining surface is located "downstream (forward)" of the deflector mounting boss. *See id.*, col. 1, lines 35-43; col. 3, lines 33-37. Tramm, in contrast, describes a sprinkler having a deflector "rearward" of the deflector mounting boss to improve the over-all appearance of Tramm's sprinkler over "conventional technology horizontal-type sprinkler deflectors." *See id.*, col. 8, lines 13-23. In view of this difference or conflicting teaching between Tramm and Fischer, the Examiner must weigh the power of each reference to suggest solutions to one of ordinary skill in the art in the obviousness analysis, considering the extent to which one might accurately discredit another. MPEP 2143.01 at 2100-128.

Furthermore, regardless of whether or not the sprinkler of Fischer can be combined with the teaching of Tramm, their combination still fails to teach or suggest all the claimed features of applicants' invention in claims 1, 20, 24, 25, 42, 45-48, 50 and 63. As has previously been established on the record by applicants, and which the Examiner has yet to refute, Fischer in view of Tramm fails to teach or suggest the following features: (1) a forward facing canopy, i.e. away from the outlet and towards a free end, as recited in claims 1, 20, 25, 42, 45-48, and 63; and (2) a deflector that has only a single flow opening, as recited in claims 24, 47 and 48. Accordingly, the combination of Fischer and Tramm fails to teach or suggest applicants' claimed invention as a whole.

Applicant respectfully reminds the Examiner that a prior art reference must be considered in its entirety, including portions that lead away from the claimed invention. MPEP 2141.03 pt. IV at 2100-130. Where the claims of the instant application are directed to a sprinkler having a forward facing deflector, Tramm teaches away from the claimed invention. Tramm specifically teaches a deflector in which, "the substantially horizontal flow containing element 48 is substantially rearward of deflector mounting surface 25 of deflector mounting boss 26." *See* Tramm, col. 8, lines 13-16. Applicants submit that none of the cited references: Fischer, Tramm, Pieczykolan, and Bosio, whether taken alone or in combination, show, describe, teach or suggest applicants' invention as a whole or provide an identifiable reason for their combination, and therefore, for at least the above reasons of record, the pending claims are patentable over the cited art.

Notwithstanding, claims 1, 20, 24, 25, 42, 45-48, 50 and 63 have been amended to generally recite a sidewall automatic fire sprinkler comprising, among other features, a deflector having a first arm, a second arm and a canopy portion having a free end defining a linear profile

extending the entire length between the first and second arms. The Examiner has not identified, in support of the rejection, where Fischer, alone or in combination with Tramm, Pieczykolan or Bosio, (in the absence of an identified reason for such a combination) show, describe or otherwise teach or suggest the claimed sidewall automatic fire sprinkler comprising, among other features, a deflector including a first arm, a second arm, and a canopy portion having a free end “defining a linear profile extending the entire length between the first and second arms.” Accordingly, a *prima facie* case of obviousness has not been established and thus, the rejections cannot stand.

Applicants submit that Fischer, whether taken alone or in combination with Tramm, Pieczykolan or Bosio (in the absence of an identified reason for such a combination), fails to show or describe or otherwise teach or suggest a deflector having a canopy portion with a free end as claimed. Instead, the deflector plate 38 of Fischer has a canopy or confining element 62 extending outward horizontally (perpendicular to the vertical plane of the hub). *See* Fischer at col. 3, lines 18-20, FIG. 3. According to Fischer, “[t]he confining element [62] is upwardly deformed at its downstream center to form channel 90, which extends upstream from downstream end 91 of element 62.” *See id.* at col. 3, lines 23-25 (emphasis added).

Accordingly, Fischer does not show or describe the claimed canopy portion having a free end defining a linear profile extending between a first arm and a second arm. Moreover, to the extent any one of Tramm, Pieczykolan or Bosio show or describe a canopy portion having a free end with a linear profile extending between a first and second arm, there is no suggestion or motivation to modify Fischer with such a teaching because to do so would change the principle of operation of Fischer. According to Fischer, “[c]hannel 90 functions as a Coanda effect surface. . . . [I]t actually lifts upward the central stream, which is traveling horizontally (parallel

to the undersurface of element 62).” *See* Fischer at col. 4, lines 24-32. Thus, to modify the deflector plate 38 of Fischer to have a canopy portion with a free end defining a linear profile as claimed, would change the principle of operation of Fischer, and therefore there is no teaching or suggestion to do so. *See* MPEP 2143.02 at 2100-130 (Rev. 5, Aug. 2006). (“If the proposed modification or combination of the prior art would change the principle of operation of the prior art invention being modified, then the teaching of the references are not sufficient to render the claims *prima facie* obvious). Because Fischer alone or in combination with Tramm, Pieczykolan or Bosio (in the absence of an identified reason for such a combination) fails to teach or suggest the claimed deflector and therefore fails to teach or suggest the invention as whole, a *prima facie* case of obviousness cannot be established. *See* MPEP 2143 at 2100-126. Applicant respectfully requests withdrawal of the rejections of claims 1, 20, 24, 25, 42, 45-48, 50 and 63.

Applicants submit, in view of the above remarks, that none of the cited references: Fischer, Tramm, Pieczykolan, and Bosio, whether taken alone or in combination, show, describe, teach or suggest applicants’ invention as a whole or provide a reason for their combination, and therefore, claims 1, 20, 24, 25, 42, 45-48, 50 and 63 are patentable over the cited art. Claims 2-11, 14, 15 and 62 depend directly or indirectly from claim 1; claims 21-23 depend directly or indirectly from claim 20; claims 26-41 depend directly or indirectly from claim 25; claim 49 depends from claims 45-48; claims 51-54 depend directly or indirectly from claim 50. Accordingly, claims 2-11, 14, 15, 21-23, 26-41, 49, 51-54 and 62 are patentable for at least the same reason.

With regard to the rejection of claims 64-74 as being unpatentable over Fischer in view of Tramm, claim 64 recites an extended coverage sidewall automatic fire sprinkler comprising, among other features,

means for transforming water discharged horizontally from the outlet into a spray pattern of water droplets dispersed over a generally horizontal, generally rectangularly-shaped extended coverage area of more than one hundred square feet located on one side of the sprinkler effective to control an ordinary hazard fire in the coverage area and further for delivering water to a collection area at an average density of about 0.15 gallons per minute per square feet when the sidewall fire sprinkler is paired with an identical sidewall fire sprinkler mounted approximately sixteen feet apart on a generally planar wall surface, the collection area being approximately sixteen feet between the sprinklers and sixteen feet away from one of the sprinklers, the collection area being located at either one of a distance of about thirty-six inches and a distance of approximately six feet and 7.5 inches below each of the sidewall fire sprinklers.

thereby invoking 35 U.S.C. 112, sixth paragraph. Applicants respectfully remind the Examiner that application of a prior art reference in the examination of a means-plus-function claim limitation requires that the applied prior art element perform the identical function specified in the claim. *See* MPEP 2183. If the prior art reference teaches identity of function, the Examiner then has the initial burden of proof for showing that the prior art structure or step is the same as or equivalent to the structure, material, or acts described in the specification which has been identified as corresponding to the claimed means or step plus function. *Id.* Applicants again respectfully reiterate that the Examiner has not satisfied this initial burden of proof. Instead, the Examiner states in response to arguments previously presented that functional recitations of delivering water to a collection area at an average density of about 0.15 gallons per minute per square feet, for example as recited in claim 64, “merely recites the ability to so perform.” *See* Detailed Action at 6. Applicants submit that the Examiner’s response neither demonstrates that the applied prior art performs the identical function in the claims nor does it show that the prior art is the same or equivalent to the structure in Applicants’ specification corresponding to the claimed means.

Claim 64 presents the “functional recitation” of “delivering water to a collection area at an average density of about 0.15 gallons per minute per square feet when the sidewall fire

sprinkler is paired with an identical sidewall fire sprinkler mounted approximately sixteen feet apart on a generally planar wall surface” in means-plus-function format. In order for the Examiner to apply any of the cited references to claim 64, the Examiner must determine that the cited references perform the identical function specified in the claim; the Examiner has yet to do so. Instead, the Examiner asserts in the Office Action, with regard to the “functional recitation,” that “[t]he device of Fischer in view of Tramm discloses the structural limitations of applicants’ claimed invention, and therefore, it too has the capability to so perform” the claimed function. *See* Detailed Action at 6. Accordingly, the Examiner’s assertions to date are insufficient in the examination of a means-plus-function claim limitation. *See* MPEP 2183.

Applicants again contend that Fischer does not show or describe any specific water density in gallons per minute per square feet to be provided over a protection area. Thus, Fischer does not show or describe the claimed function, and thus, Fischer is not an applicable reference in the examination of claim 64. Tramm, however, does describe at col. 2, lines 6-17 “standards or guidelines” used by each listing organization for evaluating horizontal-type sprinklers which include, “established requirements for: minimum amount of water which must be collected, per unit time, in specified areas (i.e. density) under and between the sprinklers.” To the extent this description in Tramm provides the identity of the claimed functional limitation, applicants contend that Tramm does not show or describe structure that is the same or equivalent to structure described in applicants’ specification corresponding to the claimed function.

Applicants’ specification as originally filed discloses at least a deflector 40, 140 as structure corresponding to the claimed means. Shown in applicants’ FIG. 7 as originally filed, for example, is the canopy portion 144 of the deflector 140 extending distally from the outlet of the sprinkler. In contradistinction, Tramm shows a deflector 22 as being rearward facing. i.e. the

flow containing element 48 of the deflector 22 is substantially rearward the deflector mounting surface. *See* Tramm, col. 8, lines 13-18, FIGS. 1 and 3. Arguably, Tramm's rearward facing deflector and applicants' disclosed "forward" facing deflector are neither the same nor the equivalent. Specifically, Tramm distinguishes its rearward facing deflector from "conventional horizontal-type deflectors" by noting that the rearward facing deflector provides for a deflector with an over-all reduced length, which according to Tramm is "less obtrusive, especially when mounted inside of a recessed escutcheon." *Id.* Because Tramm fails to show or describe structure that is the same or equivalent to applicants' structure that corresponds to the claimed means, Tramm alone, at the least, fails to satisfy the requirement of the means-plus-function claim limitation.

To the extent that the Examiner believes that the hypothesized combination of Fischer in view of Tramm provides the claimed function and further teaches or suggests structure that is the same or equivalent to the structure described in applicants' specification corresponding to the claimed means, this argument cannot stand. As discussed above, there is no motivation, suggestion or identified reason to combine these references, and the references, singularly or in combination, fail to teach or suggest the claimed invention as a whole. Accordingly, applicants respectfully submit that claim 64 is patentable, and because of their dependencies from claim 64, claims 65-74 are also patentable. Furthermore, claims 65-74 recite structural features that are encompassed by the corresponding structure and equivalents thereof provided by the means-plus-function claim limitation; that is: (1) a forward facing canopy, i.e. away from the outlet and towards a free end, as recited in claims 65, 66, 68, 69, 70, 74; (2) a generally flat canopy surface for deflector, as recited in claims 67, 68, 71; and (3) a deflector that has only a single flow

opening, as recited in claims 67, 72, 73. Accordingly, the combination of Fischer and Tramm fails to teach or suggest applicants' invention claimed in claims 65-74 as a whole.

CONCLUSION

In view of the foregoing amendments and remarks, applicants respectfully request reconsideration of this application and the prompt allowance of at least claims 1-11, 14-15, 20-54, and 62-74. Should the Examiner feel that there are any issues outstanding after consideration of this response, the Examiner is invited to contact the undersigned to expedite prosecution of the application.

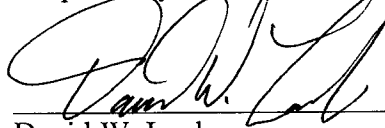
The Commissioner is hereby authorized by this paper to charge any fees during the entire pendency of this application including fees due under 37 C.F.R. §§ 1.16 and 1.17 which may be required, including any required extension of time fees, or credit any overpayment to Deposit Account 50-3840. **This paragraph is intended to be a CONSTRUCTIVE PETITION FOR EXTENSION OF TIME in accordance with 37 C.F.R. § 1.136(a)(3).**

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